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COMOR-D-56/72
(CWG-D-11/5)

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20 February 1964

MEMORANDUM FOR: Committee on Overhead Reconnaissance
SUBJECT: Use of Long-Term Evenly Spaced KH-4 Orbits
REFERENCES: a. USIB-D-41, 18/4 (COMOR-D-24/182)
b. USIB-D-41, 18/7 (COMOR-D-56/69)

1. Attached for consideration of COMOR at its meeting on 26 February is a revision of COMOR-D-56/71 which takes into account corrections made at the meeting and includes in paragraph 4 in addition suggested by the CIA as well as a footnote to paragraph 5b of the recommendations.

2. It is proposed to conclude on this document at the meeting of COMOR on Friday and to forward it to the Board.

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James Q. Reber
Chairman
Committee on Overhead Reconnaissance

Attachment
Draft memo for USIB

Copies 2, 3 State TCO
4 DIA [redacted]
5, 6, 7, 8 DIA TCO
9, 10 CACSI TCO
11, 12 ONI TCO
13, 14, 15, 16 AFNIN TCO
17, 18 NSA TCO
19, 20, 21 (S) NRO TCO

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NRO review(s) completed.

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COMOR-D-56/72
(CWC-D-1175)

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20 February 1965

MEMORANDUM FOR: United States Intelligence Board

SUBJECT: Use of Long-Term Evenly Spaced KH-4 Orbits

REFERENCES:

a. USIB-D-41.18/4 (COMOR-D-24/182)

b. USIB-D-41.18/7 (COMOR-D-56/69)

1. As directed by the USIB (Ref b, para 5b), the COMOR has considered the subject of the long-term equally spaced orbit (similar to that flown by Mission 1014) to determine when and under what circumstances orbits of this type could be most usefully flown in the future.

2. In conducting the subject evaluation, COMOR consulted with the (S) NRO and was advised as follows:

a. Currently there are two long-term evenly spaced orbits which may be flown

(1) 70° inclination and nine-day evenly spaced/ten-day synchronous; and,

(2) 75° inclination and eight-day evenly spaced/nine-day synchronous.

b. These orbits provide the potential for photographing essentially all points of the earth's surface lying

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between tangent points of the orbit. (Thus, the 70° orbit can cover most areas between 70° N and 70° S and the 75° orbit, most areas between 75° N and 75° S.)

c. Either of these orbits provides the potential for photo overlap of areas lying north of 40° N and south of 40° S to their respective tangent points (70° and 15°). Areas lying between 20° N and 40° S and 20° N and 40° S respectively will receive no overlap coverage during a given mission. Areas between 20° N and 20° S will have small pie-shaped areas of non-coverage.

d. Overlap that is obtained will be acquired on consecutive days rather than occurring on two- to five-day cycles as is the case with "conventional" KH-4 orbits (examples are KH-4 missions excepting 1014).

e. Currently two orbits can be carried from 35 days from launch (R - 35) to 17 days from launch (R - 17). These can be one conventional and one long-term orbit or two conventional ones.

f. At R - 17, a decision must be made to determine which orbit will be flown. Should it be decided after 17 days from launch (say R - 12) to reverse this decision, then the countdown must revert to R - 17.

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g. Orbits selected at R -35 are the only ones that can be flown within 35 days.

h. It is planned to reduce the R -17 time requirement to R -8 by September 1965 and to R -3 by December 1965.

3. COMCR requirements including the highest priority target list, "holiday" maps, and area priorities for J missions (which include mapping and charting requirements) can be reaffirmed for (S) NRO guidance by R -17.

4. Conclusions:

a. Long-term evenly spaced orbits are very useful for acquiring maximum one time coverage (within film limitations) of any entire geographic area (say China, Cuba, Indonesia, Congo, Brazil, or USSR) on one J mission without predictable detrimental effects. Imprecise long-range weather forecasts preclude making the judgment at R -17 as to which orbit is more desirable. Long-term evenly spaced orbits will not theoretically provide a second opportunity for coverage of high priority targets or small "holidays" in lower latitude as may be afforded by "conventional" orbit.*

*Underlining indicates proposed revision by CIA.

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b. It is advisable to use the long-term evenly spaced orbit as one of the two orbits carried from R -35 to R -17.

c. That on or before R -17, the latest intelligence requirements will be known and the better orbit can be selected.

5. Recommendations:

a. That both a long-term evenly spaced orbit and a "conventional" type orbit be included for each mission and carried from R -35 to R -17.

b. That at R -17 the (S) NRO on the basis of the most current intelligence requirement select the orbit which best meets the indicated need.*

James Q. Reber
Chairman
Committee on Overhead Reconnaissance

*CIA believes that the choice of orbits has an appreciable impact on the intelligence collection potential. Since both orbits will have been determined operationally feasible, the choice can be made solely on most current intelligence needs. This choice may involve trade-offs among several different intelligence requirements. Therefore, the orbit choice should be made by COMOR and (S) NRO in consultation, (S) NRO furnishing the degree of intelligence requirement satisfaction of each orbit and COMOR furnishing any last minute changes in the intelligence requirements.